

# RESEARCH THAT MATTERS

## VALUE-DRIVEN DESIGN



BSA



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**Ideas that propel innovation and promote best practices for efficient, responsive, and value-driven design.**

The spaces we design don't simply provide a place for healing, learning, & discovery, **but they contribute to the process.**



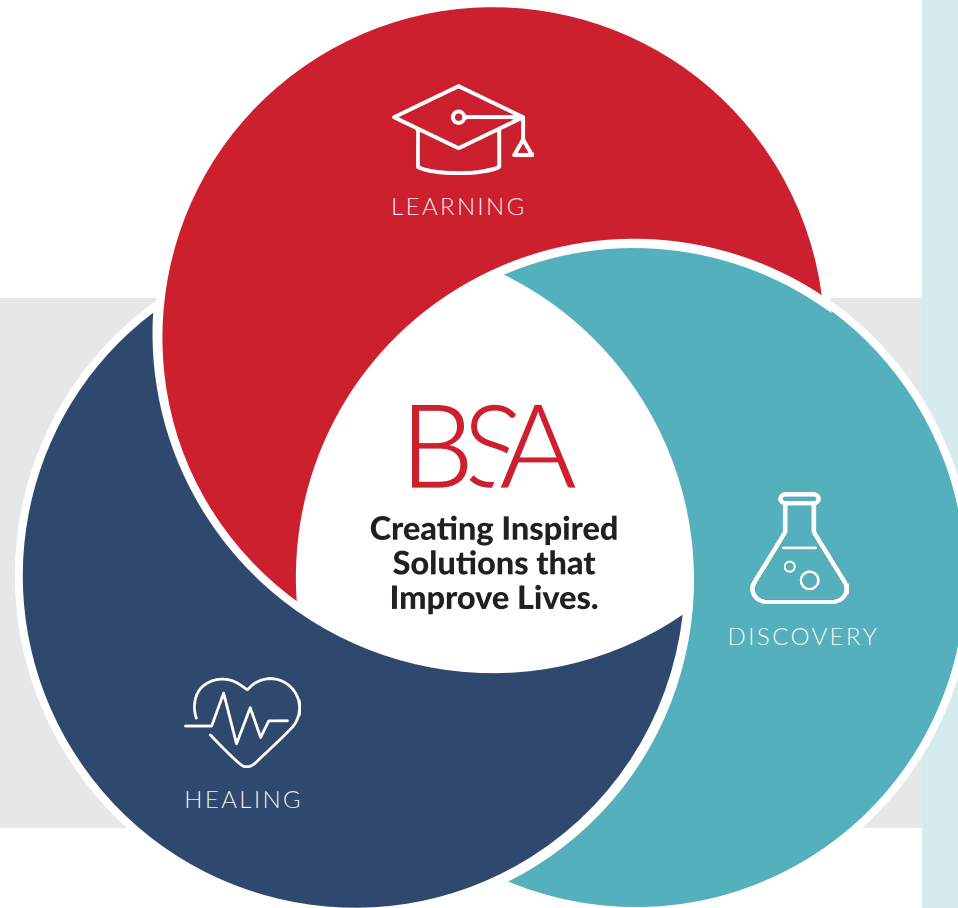
**6 REGIONAL STUDIOS**

AUSTIN | DENVER | INDIANAPOLIS | RALEIGH | ST. LOUIS | TAMPA



**200 EMPLOYEES**

ACROSS MULTIPLE DISCIPLINES



**MARKET TYPE EXPERTISE**

Academic Medical Centers / Ambulatory Care Centers / Cancer Centers / Clean Rooms / Community Hospitals / Critical Access Hospitals / Freestanding ED/Urgent Care / Heart Hospitals / Interdisciplinary Research / Medical Office Buildings / Orthopedic/Neuro/Spine / Women's & Children's Hospitals

**NOTABLE CLIENTS**

Ascension Seton / Bassett Healthcare / Cheyenne Regional Medical Center / Duke Health / Franciscan Health / Indiana University Health / Lakeland Regional Health / Medxcel / OSF HealthCare / Memorial Health / Saint Luke's Health System / Select Medical / UCHealth / UNC Hospitals / WakeMed Health and Hospitals

**The power to change outcomes.**

Creating a LifeStructure is about moving from healthcare to wellbeing, from uncertainty to resiliency, and from indifference to loyalty, all supported and proven by metrics. It is about people - patients, their families, physicians, nurses, administrators and others who support this care; and it is about our communities - those who are increasingly invested in the built and unbuilt environment that we establish in their neighborhoods.

One thing is certain, the pace of change is accelerating exponentially. BSA partners with our clients to enable growth beyond change and continue to transcend it. This propels our clients' vision forwards and enhances the way our clients' customers feel through a seamless and curated patient experience. We believe in creating lasting relationships by telling our clients' stories in ways that give life to the structures they envision.

**BRINGING HEALING TO LIFE.**

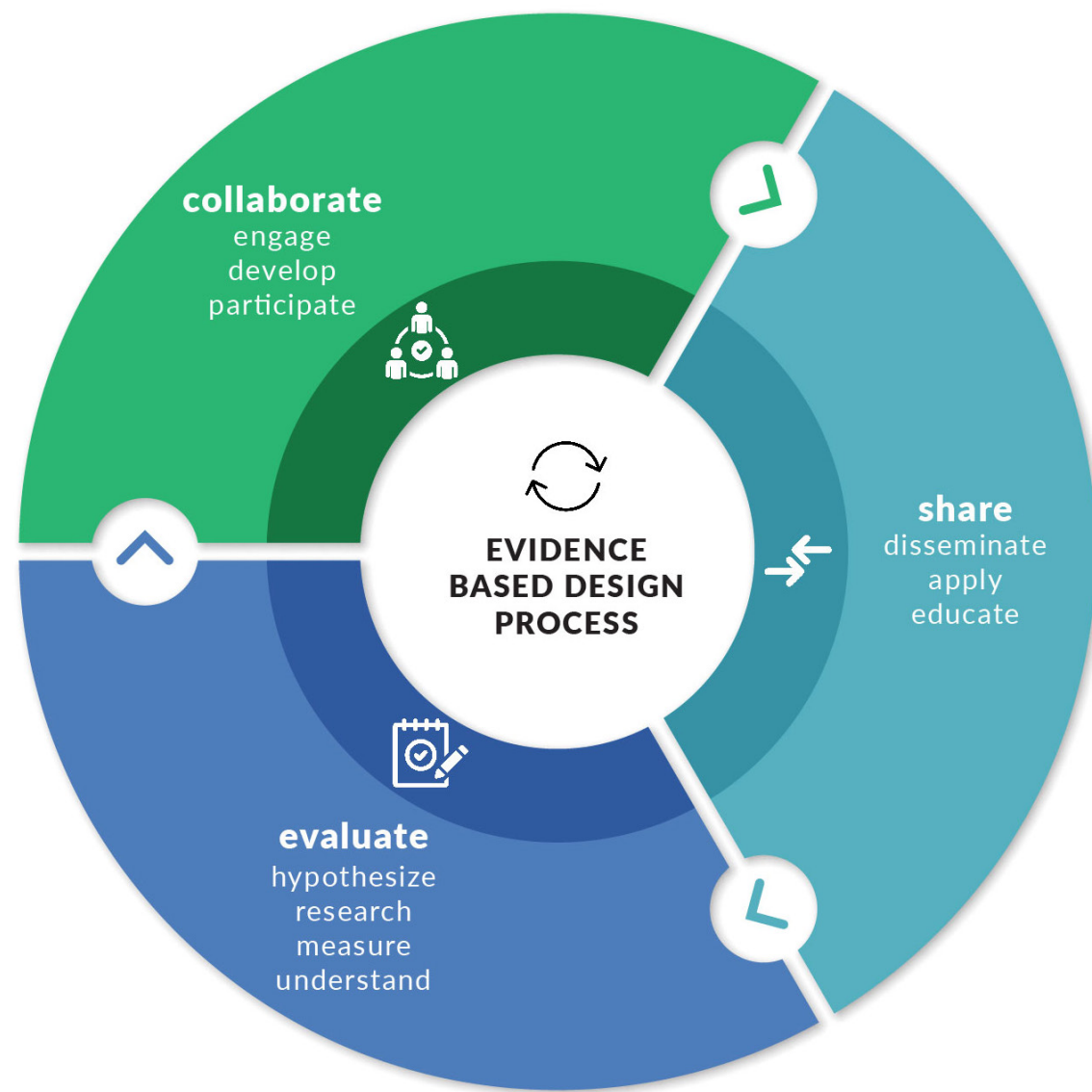
Building upon over 45 years of healthcare expertise, BSA works with top-tier organizations to deliver healthcare environments informed by research and metrics, optimized through lean operational planning, and created with an integrated design approach to problem solving.

**DESIGN HAS THE POWER TO HEAL.**

Our work is about transforming the experience of those who spend time in the spaces we create. We utilize our deep understanding of healthcare operations to create environments with our clients that improve the health of the patient and surrounding communities.

## Applied research, **design innovation.**

BSA LifeStructures strives to produce inspired solutions that improve lives. We achieve this mission by employing an evidence-based approach to improve operations, costs, efficiency, productivity, and satisfaction. The BSA research interdisciplinary team engages with our architects, planners, interior designers, engineers, and clinicians to investigate, develop, or implement research-based knowledge across the healing, discovery, or learning disciplines. The applied research targets challenges our industry and clients encounter to provide design ideas that propel innovation and promote best practices for efficient, responsive, and value-driven design.



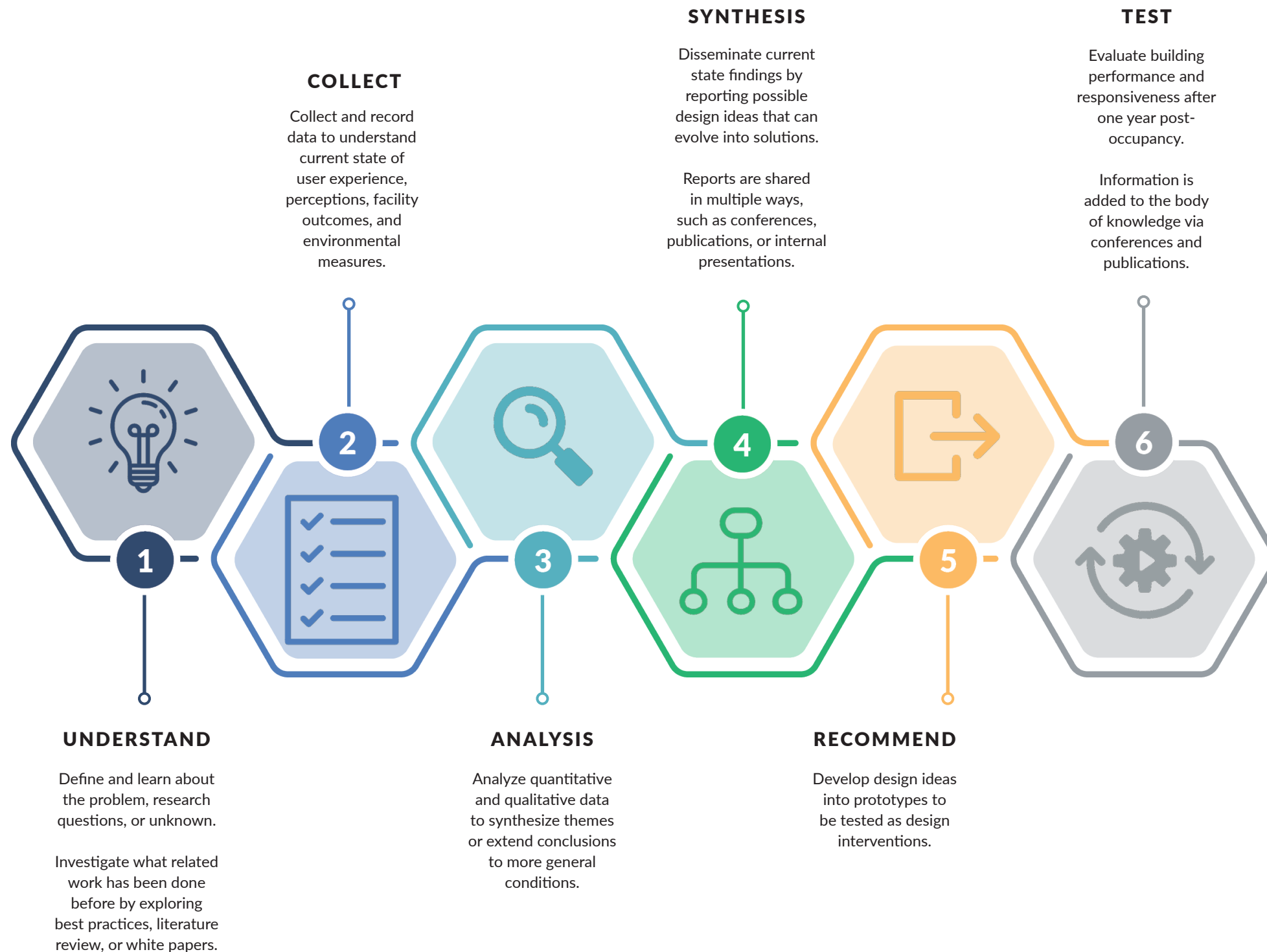
Research generates the intellectual fuel engine of innovation and growth for architectural practices. Our research team improves the knowledge by disseminating our findings in published peer-reviewed articles, white papers, or at national conferences.

### HOW DOES RESEARCH ADD VALUE?

- UNDERSTAND NEEDS**  
 Research enables designers, planners, and decision-makers to understand stakeholder needs, thoughts, and struggles through direct, anonymous, and comprehensive involvement.
- COMPARISON BENCHMARK**  
 Compares current state to best-in-class peer institutions and industry standards.
- DECISION MAKING**  
 Research helps prioritize and understand critical needs and goals as a team and engage diverse users of space.
- TO CREATE KNOWLEDGE**  
 Architecture is a class of knowledge that should be developed through research. We understand how the built environment affects people's cognition, behavior, feelings, and performance through research. The analysis lets decision-makers explore new construction methods, environmental impact, or innovative materials.

## Research Process

BSA values research and considers it an iterative process for evaluating and understanding project problems, goals, and vision.



## Research Outcomes

The cornerstone of evidence-based design is data that goes beyond typical information gathered during the project process. The following describes our metrics approach.

### FACILITY MANAGEMENT

Measure data relating to the built environment, such as square footage allocations, distances, quantities of spaces, energy use, safety, or operating costs.

### SATISFACTION

Measure satisfaction levels from users such as the patient, family, physicians, students, employees, or teachers/faculty.

### OPERATIONAL

Measure performance improvements by utilizing operational quality data.

### PRODUCTIVITY & PERFORMANCE

Used to track and measure your team's efficiency in completing their tasks.

### COLLABORATION

Measures how the physical environment supports socialization, brainstorming, team communication, or engagement opportunities.

### LEARNING

Measures the success of learning space design by measuring classroom movement, active learning, cognitive play behaviors, or well-being of teachers.

### LEGIBILITY

Measures the degree to which a building facilitates wayfinding.

## Research Methods

Research methods are the strategies, processes, or techniques used to collect data or analyze evidence to uncover new knowledge or better comprehend a topic. Two distinct types of data collection and study are qualitative and quantitative. Quantitative studies rely on numerical or measurable data. In contrast, qualitative studies depend on personal statements or documents that describe how people think or respond within society.

## Research Services

Our expertise incorporates qualitative, quantitative, or mixed methods to evaluate the context, develop accurate findings, and generate unbiased reports.

### METRICS PROJECT SUPPORT TOOLS

TOOL	COST	TIME	RESEARCH TYPE
INTERVIEWS			
SHADOWING			
OBSERVATION			
SIMULATION			
SURVEY			
SPACE SYNTAX			
LEAN WORKSHOP			
MOCKUPS			
MARKET ANALYSIS			

LOW COST	MINIMAL TIME	QUANTITATIVE DATA
MODERATE COST	MODERATE TIME	QUALITATIVE DATA
HIGH COST	INTENSIVE TIME	



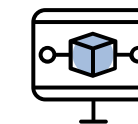
**EVIDENCE-BASED DESIGN (EBD):** We contribute to creating design and planning strategies essential for hypothesis-driven research that expects to produce a range of goals. After the project completion and occupancy, we revisit the infrastructure to test our hypothesis and develop design guidelines for future projects.



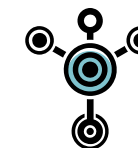
**OCCUPANCY EVALUATION:** The research team conducts an occupancy evaluation before and/or after the project completion to understand the consequences of design decisions on the process, user experience, or building performance outcomes. Occupancy evaluations are more technical than site visits and demand a higher level of standardization to produce valuable reports. Suggested methodologies for data collection include observations, surveys, interviews, shadowing, or Gemba walk-throughs.



**SURVEY:** We help clients and practitioners develop scaled and open-ended questions to understand the critical rationale, priorities, inefficiencies, and opportunities for improvement.



**SIMULATION MODELING:** The simulation solutions provide animated models that evaluate flows, resource allocation, utilization, and costs. The model captures the variability of arrival times, volumes, processing times, and resource downtime. This tool is valuable for identifying bottlenecks and determining maximum throughput levels that support strategic decisions making that reduce costs and improve performance.



**SPACE SYNTAX:** Based on the configurational theory of space and its impact on human activity and cognition, Space Syntax captures visual, axial, and compositional attributes of space to estimate visibility and accessibility outcomes.



## Research Case Studies

As the healthcare profession is challenged to deliver a better outcome at an equitable price, the value equation requires healing environments that are evidence-based, efficient, and innovative.

1

### Impact of Design on Teamwork and Communication

The previous inpatient unit layout on the 3rd floor had two centralized care team stations with decentralized nurse stations outside every patient's room, inhibiting or supporting ease of communication, visual access, and integration.

2

### Leveraging Simulation Modeling to Evaluate Clinic Design Outcomes

As a symbol of their commitment to change the paradigm from treating sickness to fostering wellness, this health system transformed the empty local mall into a multi-use health and wellness site.

3

### Critical Access Hospital Strategic Facility Planning and Decision Making

For this critical access hospital (CAH) in rural North Carolina, there was a need to assess the impact of the CAH's physical design to attract patients, recruitment, and/or provider satisfaction.

4

### Healthcare Network Master Facility Plan Data-driven Decision Making

This case study represents a master facility planning project for a healthcare network that included five community hospitals and over 40 clinics in New York.

5

### The Case for Ceiling Lifts in an Assisted Living Environment

There needs to be more knowledge on how ceiling lifts may improve operational efficiency and patient experience. This study showed the benefits of objective observational methods in projecting travel distance, time, and cost savings.

## Impact of Design on Teamwork and Communication



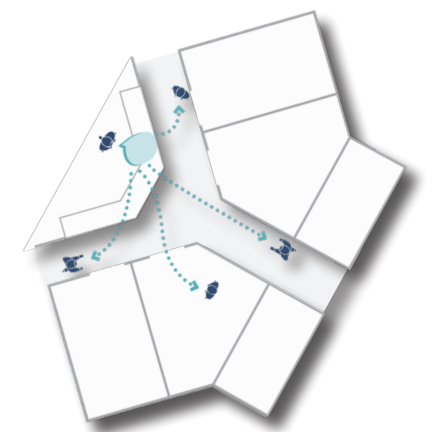
## OVERVIEW

The built environment influences nurses' ability to feel part of a team by inhibiting or supporting ease of communication, visual access, and integration. The previous inpatient unit layout, on the 3rd floor, at this Midwest hospital had two centralized care team stations with decentralized nurse stations outside every patient's room. During the design process, the staff reported a sense of isolation during shifts and longed for a more visual connection to the team, especially in emergent, critical situations. Space syntax was used to place the nurse stations in higher visibility areas, potentially increasing the probability of impromptu conversation and teamwork. The resulting design layout on the 4th floor included four large, centralized care team stations and four decentralized stations at locations with lower visibility.

IMAGE ABOVE & DIAGRAM AT RIGHT | Care team station visibility and communication. The staff reported a sense of isolation in the previous layout, this new design improved visual connection to the team, especially in emergent, critical situations.

## RESEARCH METHODS

- Survey
- Observation
- Shadowing
- Space Syntax

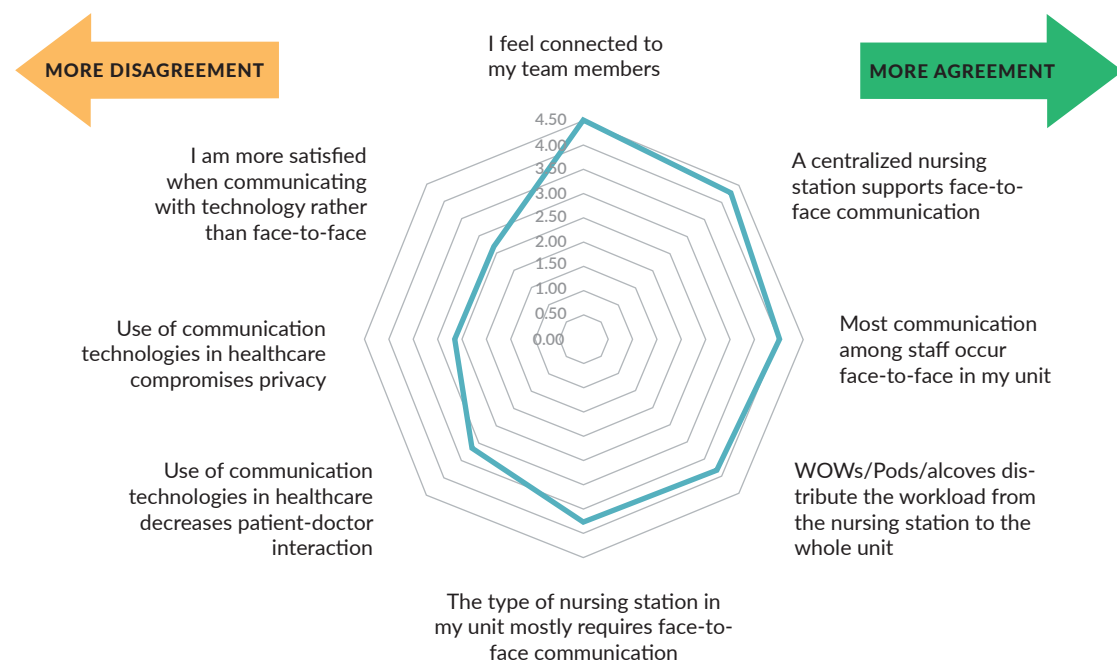


# THE OBJECTIVE

A post-construction evaluation of the new layout and the initial hypothesis of enhanced communication and collaboration through design.

# THE METHODS

The design team employed surveys, systematic observation, and shadowing methods to compare communication and collaboration across two floors. Thirty-seven behavior observation rounds, 44 shadowing sessions, and 42 survey responses were collected.

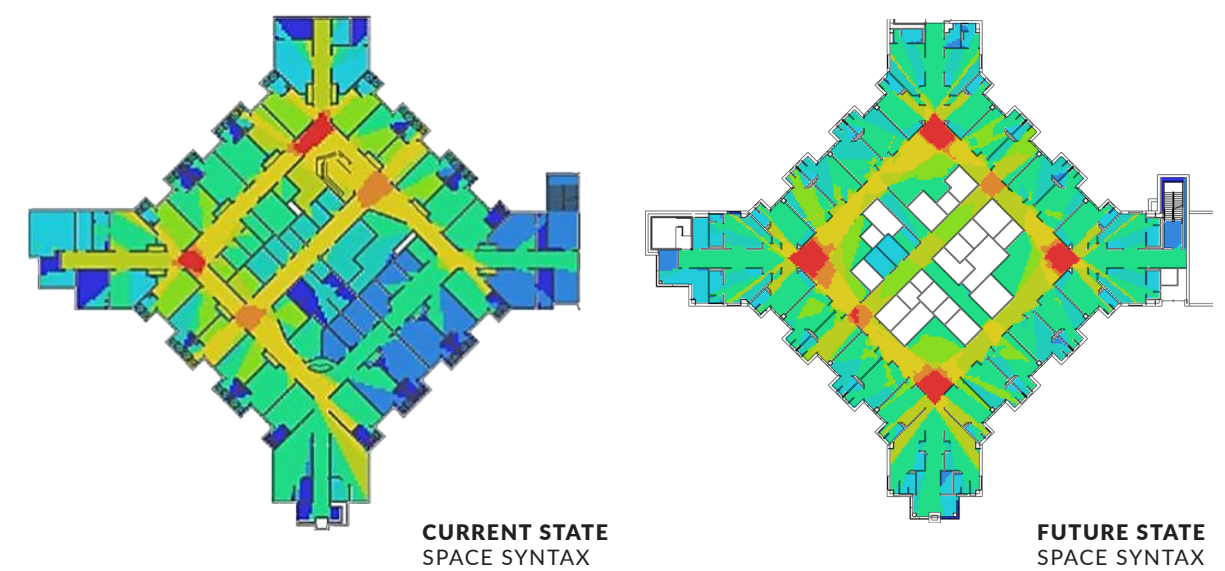
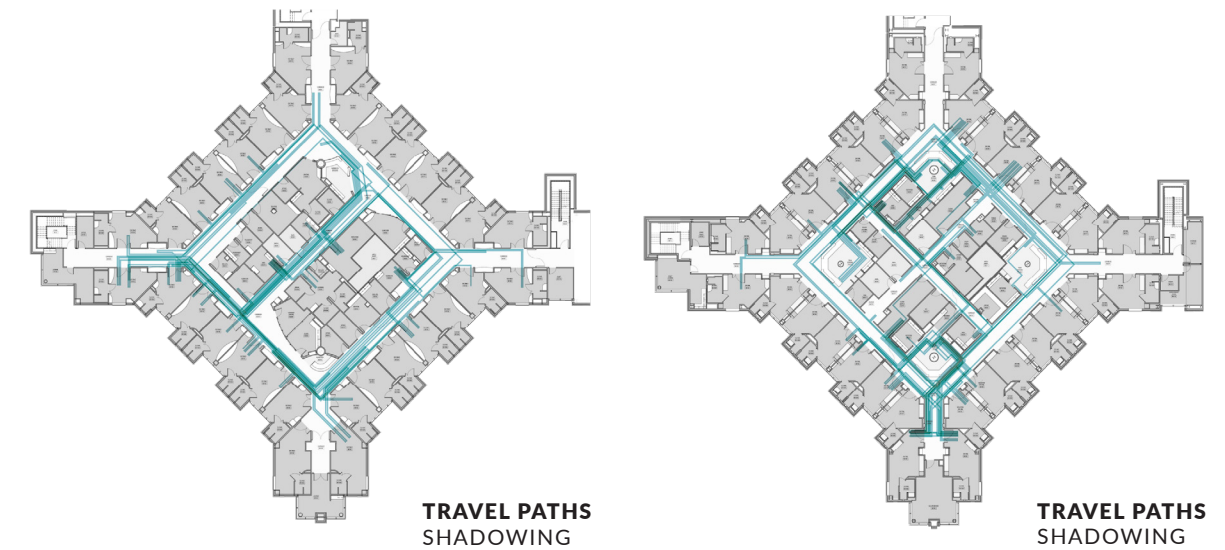
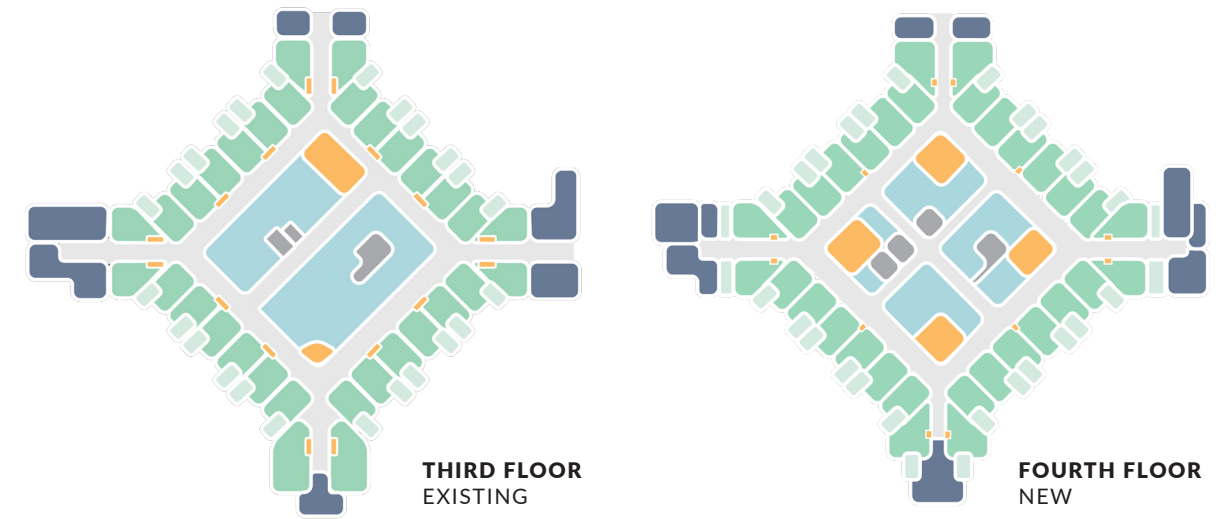


**ABOVE** | This diagram explains the clinicians' level of agreement with different statements targeted toward communication and communication technologies. Most respondents felt connected with team members and believed that a centralized nurse station supports face-to-face communication. Clinicians preferred face-to-face communication rather than technology-based communication.

**ABOVE RIGHT** | Existing floor plan. The unit has mainly decentralized nurse stations (NS) with two centralized NS. There is one service corridor for accessing clinical support rooms. New floor plan. Corridors are wider for more visibility. Service corridor in a shape of a cross to increase access for the four centralized NS.

**CENTER RIGHT** | These diagrams show the walking pattern of shadowed nurses across different time intervals. We documented the duration of face-to-face communication and technology interaction while following the clinicians.

**BELOW RIGHT** | The space syntax analysis of the current state demonstrates that the bottom corners of the central layout lack visual connectivity to patient rooms and openness for team collaboration projects. Therefore, the future state layout comprised more open and wider corridors at the corners of pathway intersections.

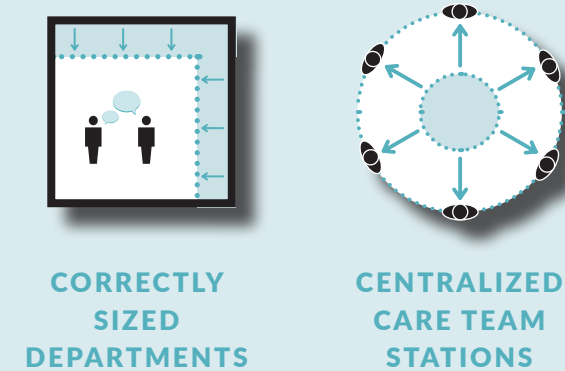
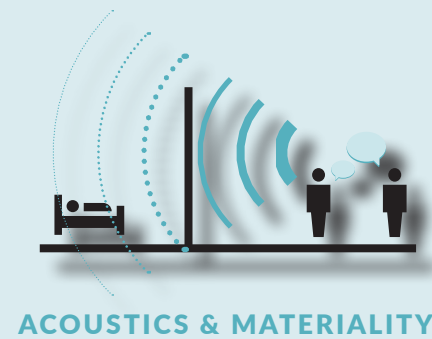
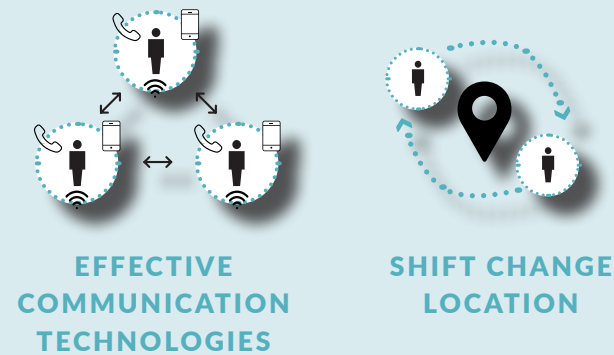


- NURSE TRAVEL PATHS FROM SHADOWING SESSIONS (OVERLAID)
- NURSE STATIONS
- CLINICAL SUPPORT AREAS
- MED/SURG PATIENT ROOMS
- EGRESS & MISC.
- INFRASTRUCTURE
- CIRCULATION

## THE FINDINGS & DESIGN IMPLICATIONS

Consistent with our hypothesis, findings showed higher perceptions of team collaboration and observed interactions at the higher integrated locations.

- Nurses reported more satisfaction with team visibility and the number of collaborative spaces in the new unit.
- Most respondents felt connected with team members and believed that a centralized nurse station supports face-to-face communication.
- Clinicians preferred face-to-face communication rather than technology-based communication.
- Participants noted that technology-based communication reduced patient privacy and patient-doctor interaction.



Nurses working in decentralized nursing stations relied on technology mediums for collaboration and communication objectives.

- To provide an improved sense of team collaboration, having an adequately sized department, acoustic levels, and frequent face-to-face communication were essential.
- Team visibility was the only predictor of positive staff communication.

Findings imply that increasing team visibility improves team communication.

- Rightly sized inpatient departments with a combination of centralized and decentralized nurse stations are recommended to provide opportunities for face-to-face communication and improve staff collaboration.

Authored by Zahra Zamani, Ph.D., EDAC, LSSYB, Director of Research with contributions from Chase Miller, ACHA, AIA, EDAC, LSSYB, Senior Architect and Jen Worley, RID, EDAC, LEED AP, ID+C, LSSYB, Director of Interior Design.

## Leveraging Simulation Modeling to Evaluate Clinic Design Outcomes



### OVERVIEW

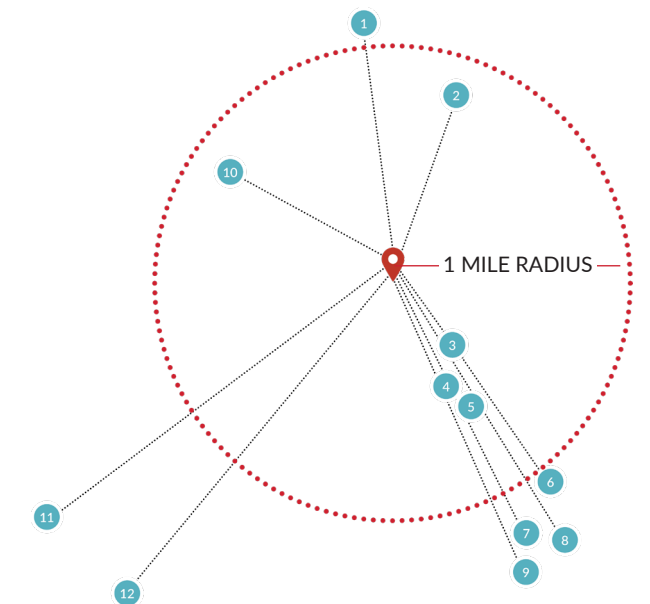
The increased outpatient volume has exacerbated the pressure to reduce operational costs and improve resource utilization for outpatient healthcare services. Outpatient healthcare facilities' complex delivery and management include multiple stakeholder processes, including physicians, nurses, nurse assistants, and patients. Further, appointment types, availability of resources, and patient arrival times impact the outpatient delivery systems. Therefore, having a logical decision-making process to achieve efficient outcomes, such as improved waiting time or resource utilization, may be challenging in these settings.

As a symbol of their commitment to change the paradigm from treating sickness to fostering wellness, this health system, in collaboration with the City, is transforming the empty local mall into a multi-use health and wellness site.

IMAGE ABOVE | To achieve patient-centered outcomes, designers sought to enhance wayfinding experiences and convenient parking access for acute or chronic illness patients. AT RIGHT | The map shows the consolidation of multiple clinics into one for this multi-clinic facility.

### RESEARCH METHODS

Simulation Modeling  
Interview

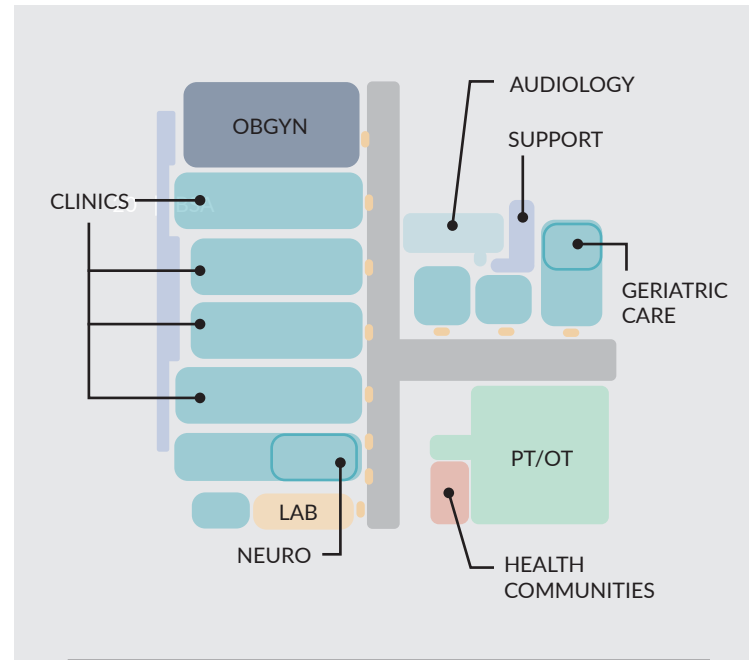


## THE OBJECTIVE

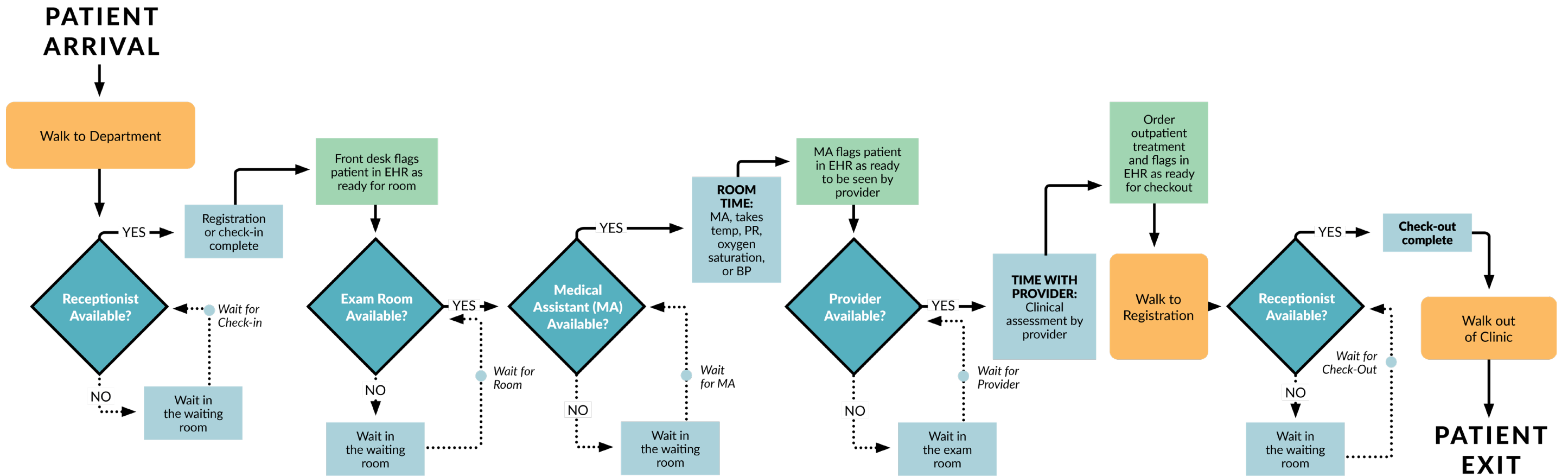
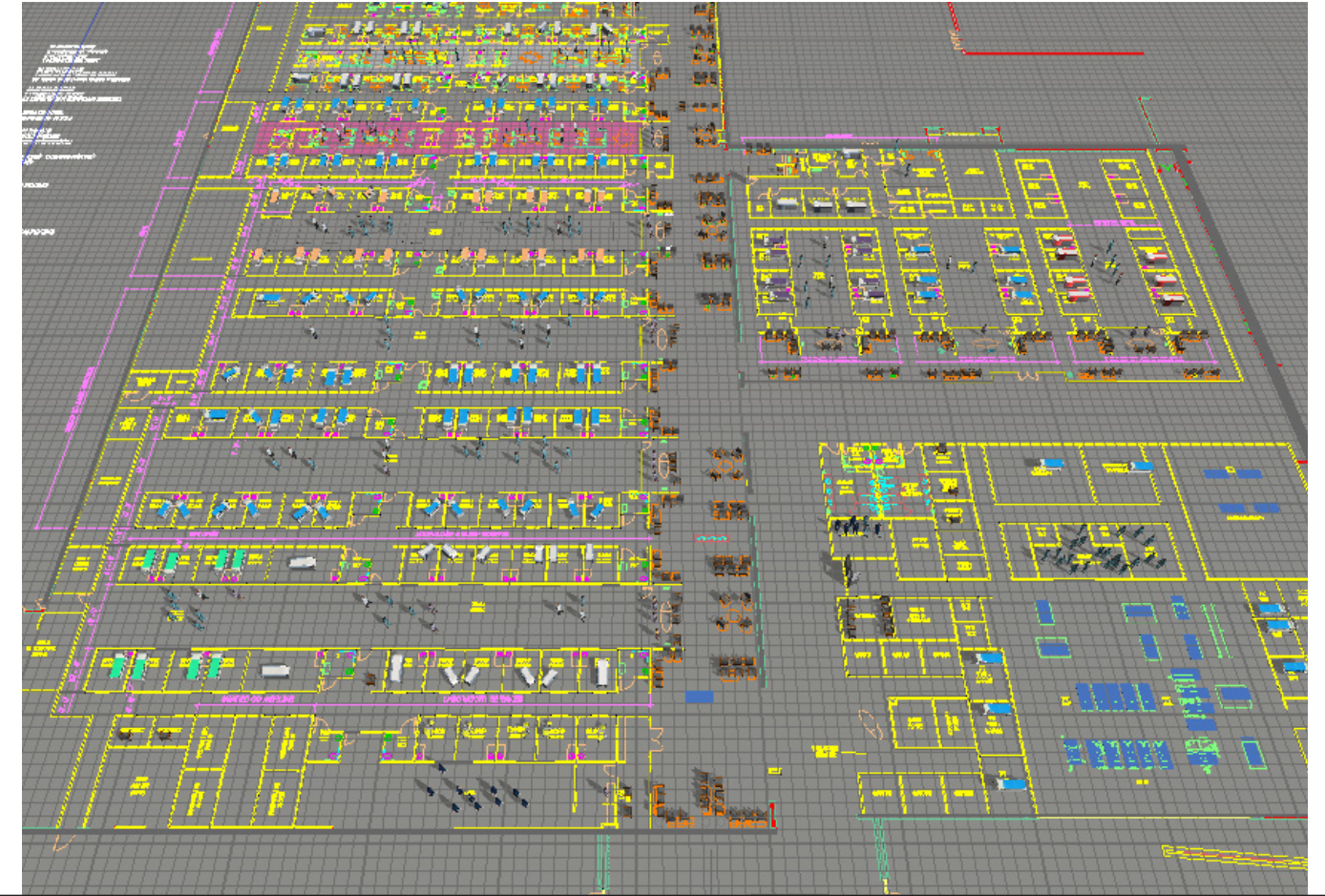
This study aimed to introduce discrete-event simulation (DES) as an effective tool in architectural planning to establish data-driven decisions, enhance resource allocations, and reduce waste.

## THE METHODS

DES identified potential bottlenecks and underutilized resources for a proposed layout of a multi-department outpatient clinic. Subsequently, through DES, the study explored the impacts of leveraging under-utilized exam rooms into telehealth rooms, flexible clinic exam rooms, centralized registration desks for primary care, or waiting areas.



ABOVE | Diagram shows approximate location and diversity of different clinics. ABOVE RIGHT | BSA used FlexSim simulations to help users visualize the effects of centralized registration vs. decentralized; the impact of adding or removing physicians and other team members; and optimized parking counts based on peak hour usage of various service lines. BELOW | Typical patient flow for routine primary care.



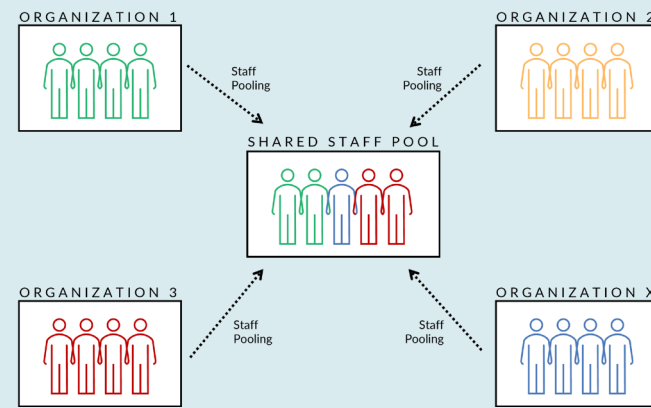
# Critical Access Hospital Strategic Facility Planning and Decision Making



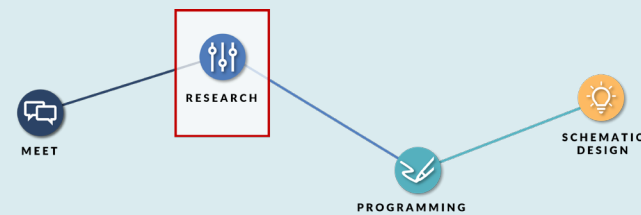
## THE FINDINGS & DESIGN IMPLICATIONS

Findings exhibited that:

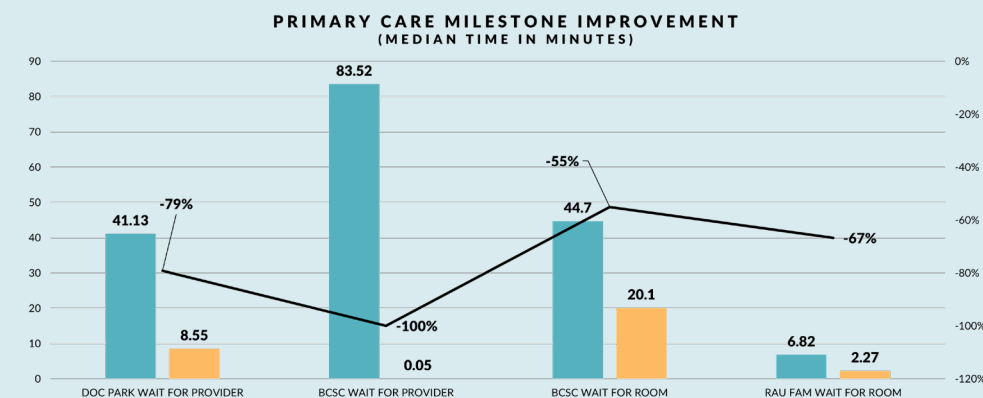
- Combining the registration desks and staff for the primary care clinics and adding kiosks for check-in or registration purposes was a practical approach to reducing patient wait time and improving resource utilization.
- DES offered an effective platform for identifying potential operational issues and examining alternative design and staffing solutions.



### OPTIMIZED REGISTRATION & STAFF UTILIZATION



### SIMULATION STUDY TIMING



In the new design, the wait for provider has been reduced by 79% and 100% for Doc Park and BCSC, respectively. Also, the additional flexible exam room for BCSC reduced the patient wait time by 55%.

## OVERVIEW

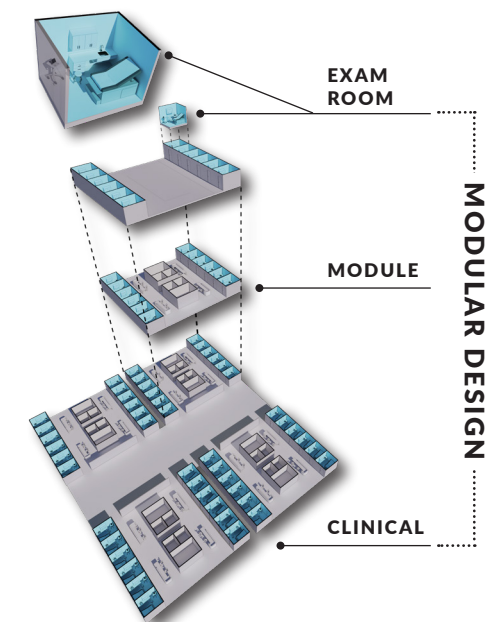
Critical access hospital (CAH) is a designation for eligible rural hospitals by the Centers for Medicare & Medicaid Services (CMS). These hospitals intend to improve access to healthcare, coordinate with experts and providers, and serve as the rural population's healthcare hubs. There is a need to assess the impact of the CAH physical design on attracting patients, recruitment, or provider satisfaction.

This case study will provide insight into steps developed for a strategic CAH facility plan in a rural North Carolina region. The operational review explored how the facility should be expanded in ten years to maximize efficiency and resource usage with integrated technology. The planning, architecture, and operational assessment team employed qualitative and quantitative assessment tools to identify issues, understand the flow, goals and visioning, and current environmental challenges.

IMAGE ABOVE | Physical design and patient experience factors are important when improving access to care. AT RIGHT | The modular design concept was one of the main goals of this project to enable future growth and flexible utilization of exam rooms.

## RESEARCH METHODS

- Surveys
- Interview





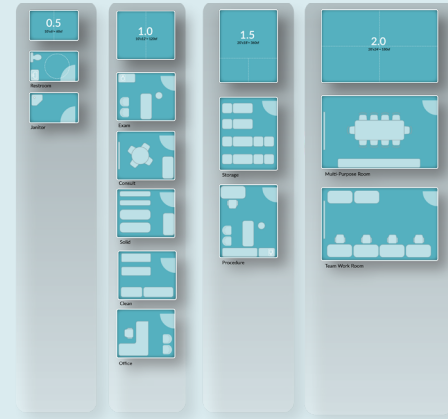
## THE FINDINGS & DESIGN IMPLICATIONS

Participants mentioned the need for department expansion, improved adjacency, wayfinding, and aesthetic qualities. Emerging themes from interviews and open-ended comments identified the following physical environment needs to improve value-driven outcomes:

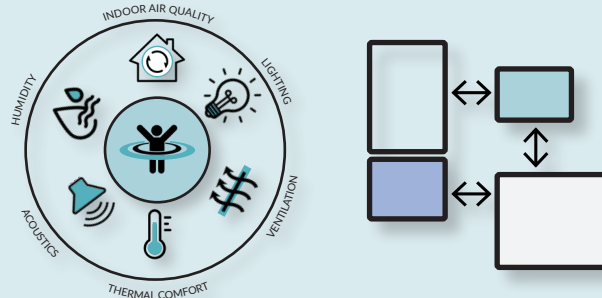
1. Physical design **adapting to volume growth**
2. Improving patient and staff access by efficient **departmental adjacencies** and telehealth systems
3. **Improving ambient conditions** for staff recruitment and patient experience
4. Support for **staff and patient privacy**
5. Support for **safety and visibility**

Findings showed a low satisfaction level for space allocation and departmental adjacency. Statistical analysis showed that satisfaction with patient privacy predicted the satisfaction with space location ( $B = .571$ ); satisfaction with equipments ( $B = 0.48$ ) and processes ( $B = 0.46$ ) predicted satisfaction with patient flows; and satisfaction with team communication ( $B = 0.63$ ) and equipment ( $B = 0.5$ ) were the main predictors of staff satisfaction. The results suggest the need for flexible facilities that accommodate growth and expansion. Further, survey results improved stakeholder involvement and communication with the leadership. Findings emphasize the importance of departmental adjacency for efficient flow, cost, and patient satisfaction outcomes.

Authored by Zahra Zamani, Ph.D., EDAC, LSSYB, Director of Research with contributions from Teri Joy, BSN, RN, CEN, TCRN, EDAC, LSSYB, Director of Planning, and Dan Gobel, AIA, NCARB, LEED AP Principal.



### ADAPTING TO VOLUME GROWTH

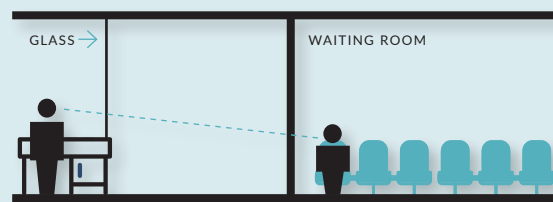


### IMPROVING AMBIENT CONDITIONS

### DEPARTMENTAL ADJACENCIES



### STAFF & PATIENT PRIVACY



### SAFETY & VISIBILITY



## OVERVIEW

There is a growing body of knowledge on evidence-based healthcare design that improves the well-being of patients or staff. In recent years, there has been an increasing interest in the built environment's impact as part of the holistic patient treatment journey. A healing environment includes design characteristics that reduce patient anxiety linked to longer recovery times, pain thresholds, and adverse patient experiences. The physical environment is fundamental in creating healing spaces that promote health and well-being.

This case study represents a master facility planning project for a healthcare network that included five community hospitals and over 40 clinics in New York. The network aims to provide an ideal rural hospital dedicated to patient care, education, and research. The final master plan document serves as a complete and integrated communication tool, unifying project recommendations with a projected schedule and financial estimates for implementation.

IMAGE ABOVE | The physical environment is fundamental in creating healing spaces which promote health outcomes, reduce patient anxiety and decrease recovery times. AT RIGHT | The master planning project was a complex project that aimed to identify the needs of different facilities, clinical staff, non-clinical staff, and suppliers in the healthcare network.

## RESEARCH METHODS

- Surveys
- Observation
- Shadowing
- Space Syntax



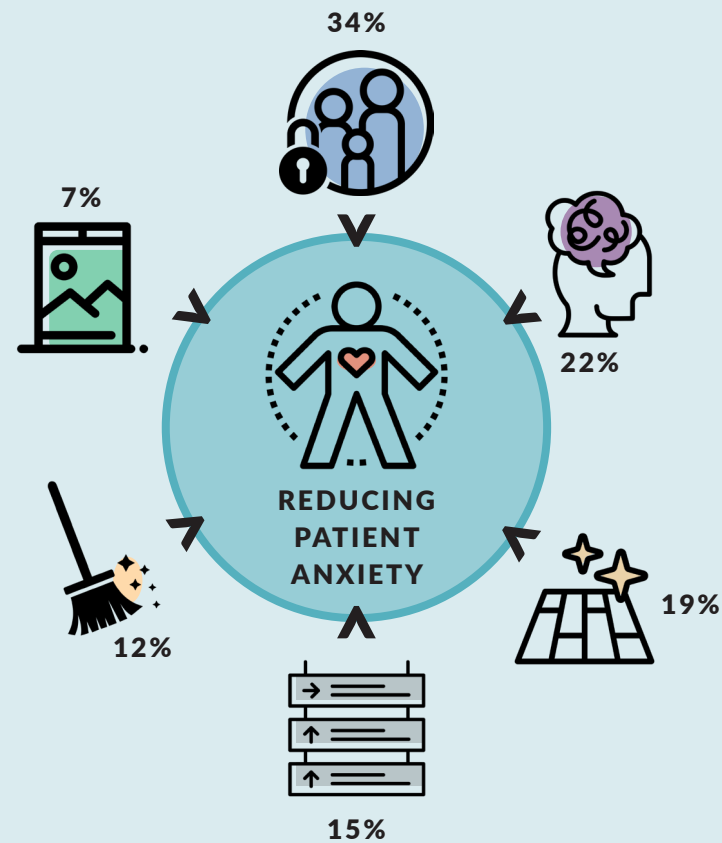


# The Case for Ceiling Lifts in an Assisted Living Environment

## THE FINDINGS & DESIGN IMPLICATIONS

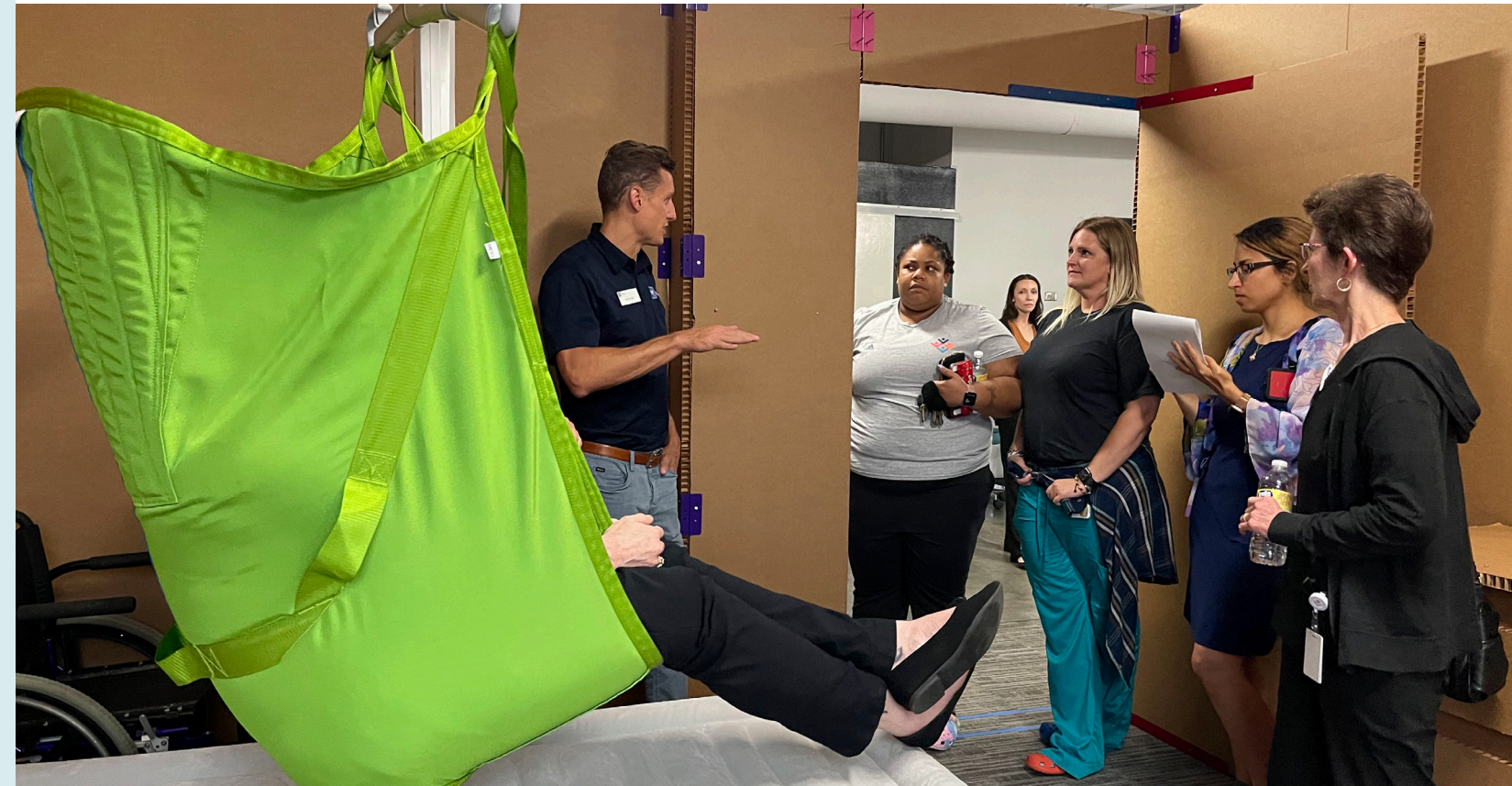
The data collected from different assessments and surveys informed concept options that were reviewed for economical, functional, and environmental effects. The options addressed issues and opportunity plans for departments and services, project costs, and development time frame.

- Statistical regression analysis provided insights into significant predictors for particular qualities or characteristics of the healthcare system. For example, perceptions of staff safety and team visibility accounted for 77% and 23% of staff security, respectively.
- Thousands of open-ended comments provided valuable and more profound insights into physical environment needs and issues. For example, participants reflected on the need to improve patient safety, comfort, privacy, positive distractions, wayfinding, and increasing patient amenities to enhance patient experience and satisfaction.
- Ultimately, the survey provided a valuable medium to enhance stakeholders' sense of involvement and appreciation in the facility planning process.



Authored by Zahra Zamani, Ph.D., EDAC, LSSYB, Director of Research with contributions from Teri Joy, BSN, RN, CEN, TCRN, EDAC, LSSYB, Director of Planning, Mark Abbey, RA, ACHA, NCARB, Principal, Monte Hoover, AIA, ACHA, Principal, and Wendy St. John, BSN, RN, TCRN, Healthcare Operational Planner.

ABOVE | Statistics have suggested the following environmental qualities as contributors for reducing patient anxiety: Improving family privacy (34%) / Providing positive distraction (22%) / Providing clear signage (15%) / Improving cleanliness (12%) / Including a higher quality of flooring (19%) / Providing views to nature (7%)



## OVERVIEW

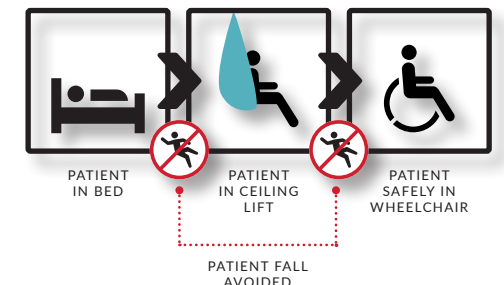
The American Health Care Association reports that 87% of assisted living homes encounter moderate to high staffing shortages. This condition underlines the need for strategies to reduce front-line professionals' burden, occupational injuries, and operational inefficiency. There is a need to understand design features that contribute to efficiency, staff satisfaction, patient safety, or environmental flexibility.

This case study discusses the research findings from cardboard mock-ups, surveys, and shadowing tools as part of the architectural decision-making process of a new assisted living facility. In this study most of the residents used wheelchairs and required staff assistance for transfers to bed, wheelchair, or bathing spaces. Yet, the client was hesitant in investing in ceiling lifts due to cost implications.

IMAGE ABOVE | The team created a mock-up of a potential ceiling lift and ground lift for staff to experience patient bath and toilet handling. Notes from staff comments during the mock-up experience were recorded for future reference.

## RESEARCH METHODS

- Survey
- Observation
- Shadowing
- Space Syntax



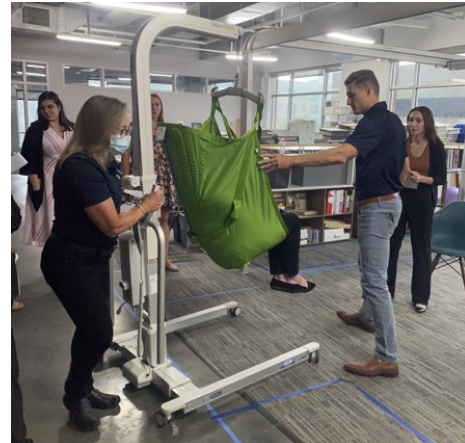
## THE OBJECTIVE

This study had several objectives that included:

- understanding typical resident flows to the bathroom or resident rooms
- identifying waste and suggesting design improvement
- review the design of a resident room through mockups to achieve direct feedback
- evaluate environmental qualities to be improved for enhanced staff satisfaction
- improve resident safety through the application of lifts
- compare lift types, benefits, and priorities

## THE METHODS

The team used cardboard mockups, surveys, and shadowing tools to understand the current flow of caregivers in this assisted living facility.



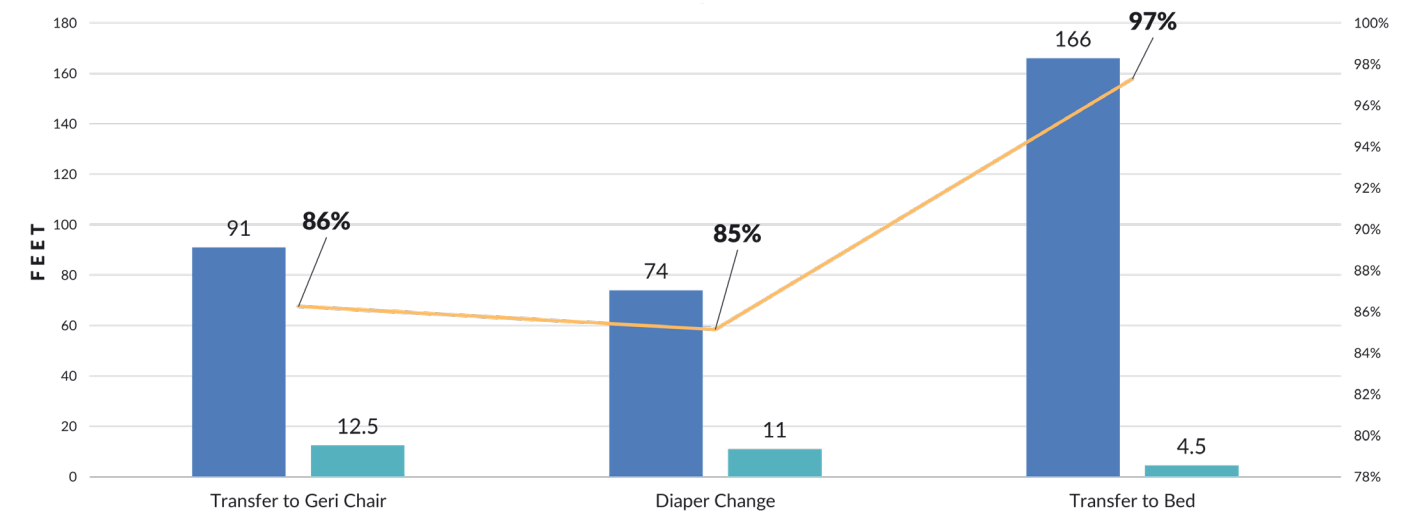
### Scenario 1 Transferring Resident on Recliner Bed (91 Feet)

- 1-2: Walk to bathroom and retrieve ground lift
- 2-3: Transfer lift to bedroom
- 3: Transfer resident from wheelchair to lift
- 3-4: Transfer lift to corridor next to recliner
- 4: Transfer resident from lift to recliner on wheels
- 4-5: Transfer lift to bathroom
- 5-6: Return to resident

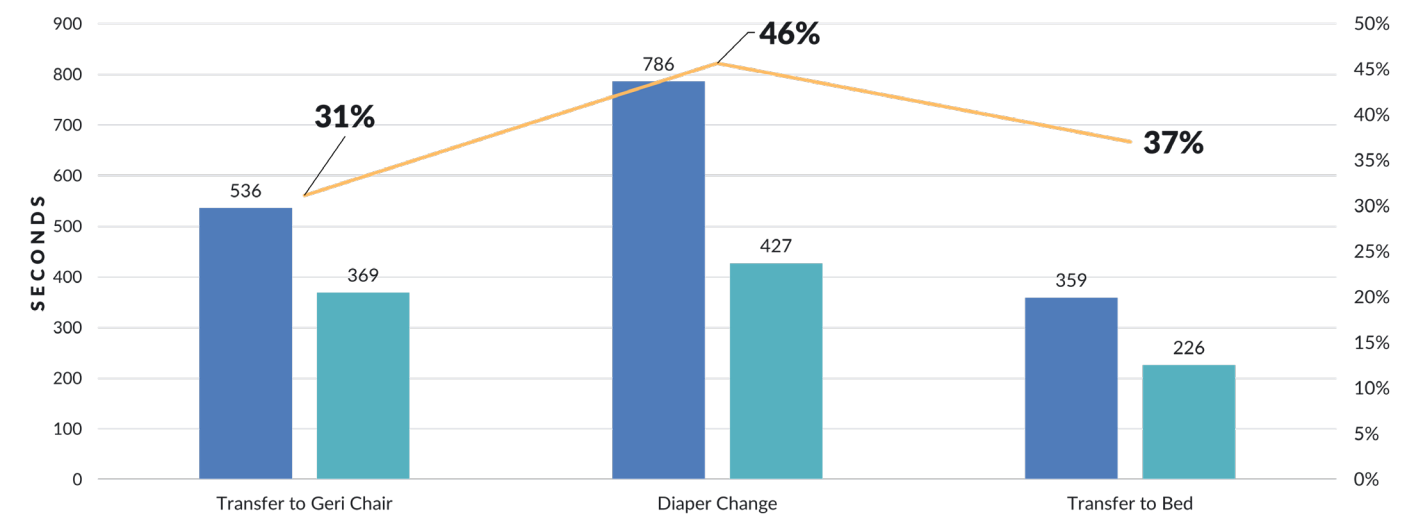
### Scenario 1 Transferring Resident on Recliner Bed (12 Feet)

- 1-2: Walk to bathroom and retrieve ground lift
- 2-3: Transfer lift to bedroom
- 3: Transfer resident from wheelchair to lift
- 3-4: Transfer lift to corridor next to recliner
- 4: Transfer resident from lift to recliner on wheels
- 4-5: Transfer lift to bathroom
- 5-6: Return to resident

### IMPACT OF CEILING LIFTS ON STAFF TRAVEL DISTANCE



### IMPACT OF CEILING LIFTS ON STAFF PROCESSING TIME



AT LEFT | During the mock-up session, staff noted the importance of flexibility within the resident rooms, which can be achievable through universal rooms and beds. Same-handed rooms, bathroom shelves, and adequate ground lifts were important for efficient flow.

ABOVE | The research team developed three scenarios assuming a ceiling lift in the bathroom or resident rooms and shadowed caregivers through the path of flow. Findings showed that, on average, such implications would reduce the caregiver's travel distance and processing time by 89% and 38%. This multi-method study generated evidence on essential features for the future design of the assisted living facility that supports patient experience, operational efficiency, and staff health.

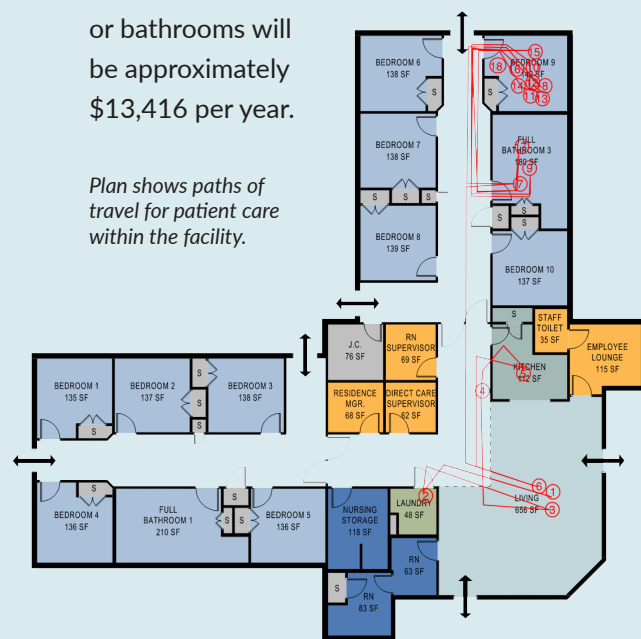
## THE FINDINGS & DESIGN IMPLICATIONS

During the mockup and survey responses, users noted that many resident transfers occur with one staff member (67%), and about 85% of patients cannot be self-supported in a wheelchair.

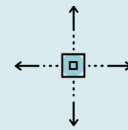
The researcher shadowed three activities of caregivers that involved patient transfers using a ground lift and recorded their path of travel, duration, and type of activities. One activity was transferring patients from bathing to changing beds, and dressing patients were considered the highest risk factor for staff musculoskeletal injuries. The researchers developed three scenarios assuming a ceiling lift in the bathroom or resident rooms. Staff perceived that the ceiling lifts improve patient dignity, reduce transfer time, improve patient satisfaction, and reduce patient injuries and falls.

Findings showed that, on average, such implications would reduce the **caregiver's travel distance and processing time** by 89% and 38%, respectively. Further, the research team computed that the cost savings for a full-time staff technician operational improvements due to ceiling lifts in bedrooms or bathrooms will be approximately \$13,416 per year.

Plan shows paths of travel for patient care within the facility.



Some of the main findings from the mockup experience included:



**DESIGN FOR FLEXIBILITY**  
(headwall design, universal rooms, universal beds)



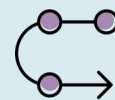
**DESIGN FOR IMPROVING PATIENT COMFORT** (HVAC location, storage)



**IMPROVE PATIENT SAFETY**  
(reduce patient falls, anti-mold materials)



**PERSONALIZATION**



**IMPROVE FLOW**  
(design supports patient movement, same-handed rooms and standardization, shelves in the bathroom, adequate ground lifts)

This study showed the benefits of objective observational methods in projecting travel distance, time, and cost savings. The data analysis presented a return-on-investment (ROI) case for the ceiling lift purchase, which many consider an expensive expenditure for adult-care facilities.

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We employ an interdisciplinary and interpractice approach to design. Moving away from traditional design, decisions are not made in silos. Instead, they are evaluated across multiple disciplines and practices to produce viable solutions that shape our future.

Our collective mission for the future is to move healthcare from treatment to wellbeing; from uncertainty to resiliency; and from indifference to community investment; all supported and proven by metrics.

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